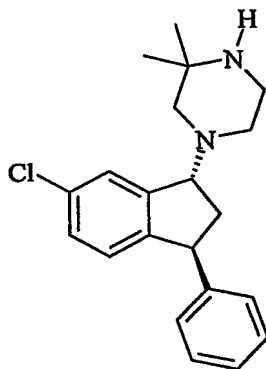


Claims

1. A compound of formula (Compound I, *trans*-1-((1R,3S)-6-chloro-3-phenylindan-1-yl)-3,3-dimethylpiperazine)



(I)

or a salt thereof.

2. The compound or salt of claim 1 being substantially pure.

3. A pharmaceutical composition comprising the compound or salt of claim 1 or 2 together with at least one pharmaceutically acceptable carrier, filler or diluent.

4. The pharmaceutical composition according to claim 3 wherein the enantiomeric excess of Compound I is at least 90%, at least 96%, or at least 98%.

5. A compound or salt of claim 1 or 2 for use in medicine.

6. Use of a compound or salt of claim 1 or 2 in the preparation of a medicament for the treatment of a disease selected from the group consisting of a disease involving psychotic symptoms, schizophrenia, anxiety disorders, affective disorders including depression, sleep disturbances, migraine, neuroleptic-induced parkinsonism, and abuse disorders, *e.g.* cocaine abuse, nicotine abuse, or alcohol abuse.

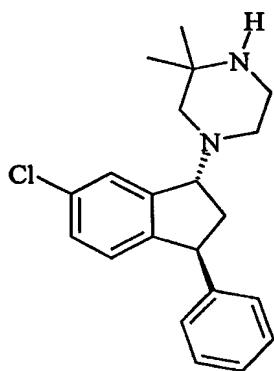
7. Use of claim 6 in the preparation of a medicament for the treatment of schizophrenia or other psychotic disorders.

8. Use of claim 7 in the preparation of a medicament for the treatment of one or more of: positives symptoms, negative symptoms and depressive symptoms of schizophrenia.
- 5
9. Use of a compound or salt of claim 1 or 2 in the preparation of a medicament for the treatment of a disease selected from the group consisting of Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, and mania in bipolar disorder.
- 10
- 10 The use according to any of claims 6-9, wherein said compound or salt thereof is in the form of a pharmaceutical composition as defined in claim 4.
11. A method for the treatment of a disease selected from the group consisting of a disease involving psychotic symptoms, schizophrenia, anxiety disorders, affective disorders including depression, sleep disturbances, migraine, neuroleptic-induced parkinsonism, or abuse disorders, *e.g.* cocaine abuse, nicotine abuse, or alcohol abuse, comprising administering a therapeutically effective amount of the compound or salt as defined in claim 1 or 2.
- 15
12. The method of claim 11 for the treatment of schizophrenia or other psychotic disorders.
- 20
13. The method of claim 12 for the treatment of one or more of: positives symptoms, negative symptoms and depressive symptoms of schizophrenia.
- 25
14. A method for the treatment of a disease selected from the group consisting of Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, and mania in bipolar disorder, comprising administering a therapeutically effective amount of the compound or salt as defined in claim 1 or 2.
- 30

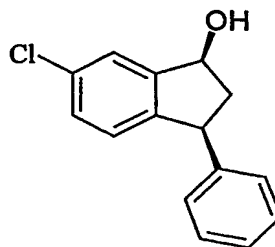
15. A method according to any of claims 11-14, wherein the patient treated with Compound I or a salt thereof is also treated with other medicament(s).
16. The method of claim 12, wherein the patient treated with Compound I or a salt thereof is also treated with at least one other medicament.
17. The method according to any of claims 11-16, wherein said compound or salt thereof is in the form of a pharmaceutical composition as defined in claim 4.
18. A compound *trans*-1-(6-chloro-3-phenylindan-1-yl)-3,3-dimethylpiperazine or a salt thereof for use in medicine.
19. A pharmaceutical composition comprising the compound or salt of claim 18 together with at least one pharmaceutically acceptable carrier, filler or diluent.
20. Use of a compound or salt of claim 18 in the preparation of a medicament for the treatment of a disease selected from the group consisting of a disease involving psychotic symptoms, schizophrenia (e.g. one or more of positives symptoms, negative symptoms and depressive symptoms of schizophrenia), Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, mania in bipolar disorder, anxiety disorders, affective disorders including depression, sleep disturbances, migraine, neuroleptic-induced parkinsonism, abuse disorders, *e.g.* cocaine abuse, nicotine abuse, or alcohol abuse.
21. A method for the treatment of a disease selected from the group consisting of a disease involving psychotic symptoms, schizophrenia (e.g. one or more of positives symptoms, negative symptoms and depressive symptoms of schizophrenia), Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, mania in bipolar disorder, anxiety disorders, affective disorders including depression, sleep disturbances, migraine, neuroleptic-induced parkinsonism, abuse disorders, *e.g.* cocaine abuse, nicotine

abuse, or alcohol abuse, comprising administering a therapeutically effective amount of a compound or salt as defined in claim 18.

22. A method for manufacturing a compound of formula I (Compound I) or a salt thereof, which method comprises conversion of a compound of formula Va (Compound Va) in *cis*-configuration to the compound of formula I, wherein I and Va are as follows:

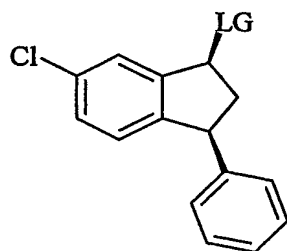


(I)



(Va)

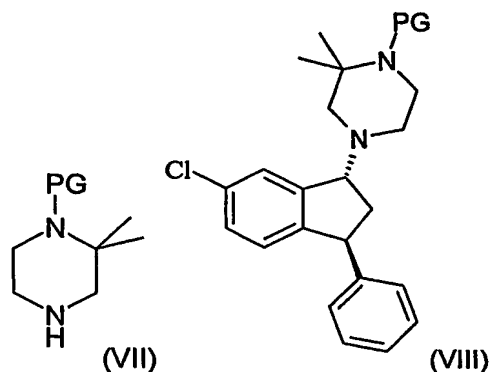
23. The method of claim 22, comprising conversion of the alcohol group of the *cis*-alcohol of formula Va to a suitable leaving group LG, resulting in the compound of formula VI.



(VI)

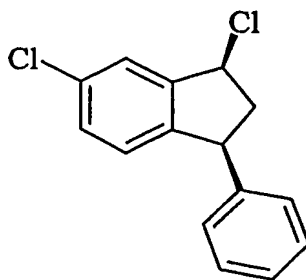
24. The method of claim 23, wherein LG is a halogen, *e.g.* Cl or Br, preferably Cl, or a sulphonate.
25. The method of any of claims 22-24, wherein Compound VI is precipitated from a suitable solvent.

26. The method of claim 25, wherein LG is a halogen, preferably Cl, and the solvent is an alkane, e.g. heptane.
27. The method of any of claims 22-26, wherein Compound VI is reacted with 2,2-dimethylpiperazine to obtain Compound I.
28. The method of claim 27, wherein Compound I is precipitated as a suitable salt, *e.g.* a salt of an organic acid, such as an organic diacid.
29. The method of claim 28, wherein the formed salt is a fumarate salt or a maleate salt of Compound I.
30. The method of any of claims 22-26, comprising
- reacting Compound VI with 1-protected 2,2-dimethylpiperazine (VII), wherein PG is a protection group, *e.g.* selected from the group of phenylmethoxycarbonyl, tert-butyloxycarbonyl, ethoxycarbonyl, and benzyl, thereby obtaining a compound of formula VIII; and
 - deprotecting Compound VIII to obtain Compound I,
- wherein Compound VII and VIII are as follows:



31. A method for the preparation of Compound I or a salt thereof comprising reacting a compound of formula VIa (*i.e.* Compound VI for which LG is Cl) with 2,2-dimethylpiperazine.

32. A method for the preparation of Compound I or a salt thereof comprising reacting a compound of formula VIa



(VIa)

with 2,2-dimethylpiperazine in presence of a base.

33. The method of any of claims 22-32, wherein Compound Va is obtained by enzymatical resolution of Compound V.